

We Are What We Eat: A Cultural Examination of Immigrant Health and Nutrition in Middle Tennessee

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Abstract

The purpose of this research is to examine recent Hispanic immigrants to Middle Tennessee from an anthropological perspective to discover possible correlations to answer the research questions: how are Latino and Hispanic immigrant populations' nutritional statuses affected by acculturation to the United States and to Middle Tennessee, and what factors come to play in changing their own food practices? Results include information gleaned from previous ethnographic research as well as from interviews with local Hispanic immigrants relating to food insecurity, the impact of school lunches on immigrant children's health, and possible remedies to halt the declining health of immigrants to the Middle Tennessee. This research suggests that the immigrant experience is not the same for every group or even for each individual, that health outcomes of other immigrants differ according to their experiences of acculturation.

INTRODUCTION

Demographic information on Tennessee has been and is still being computed in terms of the black and white population; however, the actual demographics of the state are much more complex. Tennessee has the sixth highest rate of increase of immigration growth in the United States, and it is estimated the immigrant population and immigrant births are adding nearly 210,635 persons to Tennessee every year equating to 24.6% of the state's overall population increase, Tennessee must accordingly address its new diversities.

Middle Tennessee, specifically Murfreesboro, reported in the 2000 Census a foreign-born population of 4.9% of the total population of the city. Residents of Hispanic or Latino/a origin accounted for roughly 3.5% of the city's total population, thus making this group the third largest, behind the city's white and black populations. This statistic shows the metamorphosis of diversifying ethnic populations and mirrors the changes apparent across the nation of the evolving demographics. This transformation requires a critical re-examination of the issues of most significance to the state.

While Tennessee's population is becoming more diverse, its population is also becoming alarmingly unhealthy. According to recent statistics Tennessee consistently ranks among the worst states in self-reported health status (46th), lack of regular physical activity (49th), percent overweight or obese (47th), and rate of diabetes (50th). This research project aims to examine the population from the angle of both an increasingly diverse population as well as the disturbing trends in health, and will be applying an anthropological perspective to discover possible correlations. It posits that an anthropological approach that focuses on the details of people's lived experiences will improve our understanding of how health issues arise, and how people deal with these issues.

In-depth studies of food systems highlight the pervasive role of nutrition in human life. By focusing on a specific ethnic minority, the researcher begins to understand the factors that relate food consumption patterns with other parts of social life, that when combined present an overall image of the reasons for the changing bodies of Hispanic-Latino immigrants in the United States. This research will first examine the study of food in anthropology. It will move on to previous research on health and immigrants, and finally will analyze the specific data collected during a recent, in-depth field project conducted by anthropologists Dr. Ida Fadzillah and Dr. William Leggett in 2009-2010 with the Hispanic immigrant families in Murfreesboro focusing on the health habits of these families. This research poses the following research questions: how are Latino and Hispanic immigrant populations' nutritional statuses affected by acculturation to the United States and to Middle Tennessee, and what factors come to play in changing their own food practices? The conclusions will focus on three elements: food insecurity, school lunches, and possible remedies to the declining health of immigrants to the US and to Tennessee in particular.

HEALTH AND NUTRITION IN THE UNITED STATES

The study of health and nutrition by anthropologists is not a new or unusual focus; for decades many anthropologists along with other social scientists have made the study of food

culture and health and nutrition a top concern in their research (see, for example Anderson 2005; Gabaccia 1998; Kumanyika 2008; Long-Solis & Vargas 2005). The ethnographic method, which focuses on in-depth interviews, participant-observation, focus groups, and quantitative surveys over an extended period of time, helps to assess how multicultural communities view health and well-being in relation to the food consumption habits they practice (see Galvan 2009; Gold 2009; Kershen 2002; Minoura 1992). The ethnographic approach is thus useful in providing the complex details of a situation that statistical studies often lack.

While anthropologists have long studied health and nutrition among non-Western cultures, what is relatively new to the discipline is the involvement of anthropologists in exploring and studying the environments surrounding immigrants and refugees in the United States. Specifically, these new Americans' sense of community, educational settings, religious ideologies, economic statuses, food practices, et cetera have only recently been examined to determine their affect on immigrants' health since emigrating to the US. This focus had previously been utilized mainly by clinical nutritionists and epidemiologists (see Clark 1993; Minoura 1992; Montero-Sieburth & LaCelle-Peterson 1991; Story, Kaphingst, Robinson-O'Brien, & Glanz 2007).

Interestingly, very little previous research has been conducted on immigrant nutrition in the American South, and even less on the nutrition and health of immigrants in Tennessee. However, because the diversity of the Middle Tennessee population is growing at such a rapid pace, an examination of immigrant nutrition and health is important in order to provide a more positive, culturally- sensitive policy on health and nutrition for people moving into the area.

In terms of the Latino and Hispanic immigrant population in the United States, using the ethnographic process can provide key insights into food consumption patterns in the daily lives of these individuals which are not usually captured in a 24- hour food recall or food frequency questionnaire. Using life histories and other types of open-ended interviews with consultants can provide information about lifetime experience of individuals, which can lead to key information about food and chronic nutrition-related diseases of their culture. Even clearer for researchers is proof that combining qualitative and quantitative methods add to well-rounded explanations for food consumption patterns (see Himmelgreen 2002). Importantly, as immigrants move to the American South, particularly to Tennessee, dietary habits seem to be changing, making the immigrant population prone to higher rates of obesity and nutrition-related diseases (see Denkler 2009; Ferris 2005; Long-Salis 2007; Marte 2007; Pérez and Abarca 2007; Salazar 2007). Heart disease, cancer, stroke, chronic respiratory diseases, accidents, diabetes, Alzheimer's disease, influenza and pneumonia, nephritis, and septicemia are the ten leading causes of deaths in the United States, and most of these illnesses can be prevented or delayed with proper nutrition and physical activity. Comparing minority groups in the United States, heart disease is less prevalent among the Hispanic population compared to African Americans and Caucasians, though this fact has already begun to change. Instead the growing epidemic within the Hispanic

and Latino immigrant community is in elevated cases of diabetes and obesity, (Edelstein & Sharlin 2011) compounded as cases of Attention Deficit Disorder, asthma, and high blood pressure have begun to surface, signifying an important, life-threatening phenomenon among immigrants.

So what factors account for the ill-health associated with immigration to the United States? Acculturation and the transition of ethnic peoples to a Westernized dietary pattern of highly processed, high-fat foods has been linked to morbidity through inflammatory processes and oxidative stress, as well as an increase of cellular changes and chronic diseases of aging as they move away from traditional dietary patterns of fresh whole foods (Iso, Date, Noda, Yoshimura, & Tamakoshi 2005). However, the changing food culture of Hispanic and Latino immigrants is not the only reason there have been such staggering negative effects on the bodies of these individuals. Changes in physical activity levels and the effects of spending less time together as families in a traditionally close-knit community lead to psychosomatic diseases such as depression, stress, and anxiety, which further exacerbate the obesity problem when these individuals begin eating emotionally as a means of dealing with the unexpected pressures of living in the United States. Socioeconomic pressures negatively impact the health statuses of the Hispanic-Latino community as its members struggle to work at multiple jobs, many as single mothers, combined with raising children and providing for the needs of their families.

THE ANTHROPOLOGY OF FOOD

Because food touches everything, is the foundation of every economy, a central pawn in political strategies of states and households, and marks social differences, boundaries, bonds, and contradictions... the development of research interests in food is as old as anthropology. (Counihan & Van Esterik 1997: 1)

Anthropologists have long studied immigrants to the United States, and the importance of studying the relationship between food and culture is that, "Food systems are, like myth or ritual systems, codes wherein the patterns by which a culture 'sees' are embedded. Through analysis of food and eating systems one can gain information about how a culture understands some of the basic categories of its world" (Douglas, quoted in Meigs 1988: 100). Early anthropologists studied food because of its central role in many cultures, and several wrote pointed pieces on foodways (see Du Bois 1941; Firth 1934; Fortes 1936; Mead 1969, 1943; Powdermaker 1959; Richards 1932, 1939).

The majority of recent studies have been conducted on immigrant groups living in either east or west coast states, border states, and mostly within large metropolitan areas (see Donnelly & McKellin 2006; Eddy 1968; Goodkind & Foster-Fishman 2002; Mangin 1970; Osypuk, Roux, Hadley, & Kandula 2009; Silka 2007; Southall 1973). Only in current years has the focus on studies of food cultures of these new Americans shifted away from solely covering topics such as food and memory and identity. New studies examine healthcare concerns immigrants now face after cultural adaptations to the Westernized diet, bringing about illness and diseases such as obesity, asthma, diabetes, high blood pressure,

followed by a host of other life altering and threatening conditions prevalent among these minority ethnic groups (see Beebout 2006; Brettell 2000; Kasper, Gupta, Tran, Cook, & Meyers 2000; Magnusson, Hulthén, & Kjellgren 2005; Marte 2007; Salazar 2007).

The main factor pinpointed as the cause of most of the obesity problem is primarily the result of consuming more calories than people expend in a given day (Bleich, Cutler, Murray, & Adams 2008). Even social scientists in other countries are researching the obesity problem among low-income immigrant and refugee children exploring dietary patterns, physical activity and perceptions of relationships between life-style and health (Magnusson, Hulthén & Kjellgren 2005). The implication from research suggests a global movement to balance hunger and malnutrition in the developing world with increased physical activity to offset growing obesity issues in the developed sectors. Suggestions to halt this epidemic insist upon both cross-cultural participation as well as coordination within and across national boundaries.

A study of immigrant neighborhoods in four US cities provides viable data and conclusions examining the health consequences of living in neighborhoods with higher proportions of immigrants, showing that the benefits of living in an immigrant community have different associations with different health behaviors and outcomes (Osypuk, Diez Roux, Hadley, & Kandula 2009). Conclusions from this research offer the explanation that immigrant neighborhood residents' health statuses are influenced by socioeconomic status, level of acculturation, poverty and food insecurities, and quality of the neighborhood social environment.

Katarina Sussner's research concerning the influence of immigration and acculturation on the development of overweight in Latino families reveals that exposure to obesogenic environments in the US may foster development of overweight and obesity in immigrants with greater acculturation. It is clear that immigrants come to the US in better health compared to the community population around them but the longer they live here and become acculturated to mainstream eating habits, Hispanic-Latino populations' health statuses suffer.

THE SITUATION IN MURFREESBORO: PRE-IMMIGRATION LIFE

Ethnographic interviews with Hispanic immigrants living in Middle Tennessee tell fascinating stories about the daily lives consultants lived in their home countries. The interviews are divided by these immigrant women's descriptions of physical activity, nutrition and eating habits, and school lunch offerings prior to immigration. One of the most important aspects from the interviews discussing physical activity pre-immigration is that all of the women said they did a lot of walking in their home countries. Combined with domestic functions, these women describe a life of being very physically active.

Emily said of physical activity:

In the evening we would always go out and walk [to the park or to the lake]. Usually the people they [went] walking like our family – it's just walk to go to the store, to the grocery store or something like that.

Georgia echoed her sentiments:

In Honduras I didn't have a car, no one had a car, we would go to the groceries, to the downtown center all walking, and that was a long distance. And we would go two to three times a week. We loved it.

Vickie reported:

We were always walking. We would meet in the center of the town that was called the "plaza." The custom was to walk around it, and the young men and young women would meet and see each other as they were walking around. And that was the custom for each weekend on Sunday.

Pre-immigration nutritional habits are consistent with a diet made up of nutrient-dense fruits and vegetables combined with complex carbohydrates from grains, such as rice and breads and combined with meat. Drinks consumed tended to be *aguas frescas* (which are made by blending fresh fruit together with water, sometimes sweetening the beverage before serving), along with other fruit juices, water, milk, fruit flavored soft drinks, and Coca-Cola.

Donna described her family's eating patterns:

Over there, during breakfasts or lunches we always eat at the table, but the last meal is typically eaten in front of the TV. The foods were....we are accustomed to eating beans, rice, meat, tortillas... [We would drink] fresh drinks... Lime juice, Tang, sometimes Coca-Cola. Sometimes, I would go [grocery shopping] every three days. Over there you wouldn't be able to buy too much food because it would spoil. For dinner it's always beans, rice, and tortillas. If my husband goes out fishing, then we will eat fried fish. I wasn't accustomed to buying any sweets really.

Emily stated:

We all eat together; the TV is never on; and all meals are eaten at the table. We would buy food daily: fresh fruit, fresh meat... Over there there isn't [prepackaged convenience foods]; people live according to their financial situation. I introduced fruits and vegetables in my girls' diet from a very early age. I would boil the fruits or vegetables, and liquefy them and feed them that. All the children [in Mexico] were used to eating veggies at a young age.

Mary described her family's eating habits:

In Mexico, we always make meat fresh from going to the market and we went to the store to buy the fresh tortillas. [We go to the market everyday for food]. We don't do [use] a lot of salt.

Most of the women said eating fast food was too expensive or that the restaurants were far away. They did describe buying food from street vendors as opposed to buying fast food.

Donna described eating out in Mexico:

Over there ladies in the neighborhood would go out and sell tacos. That's what we would eat [instead of fast food].

Emily's description matched Donna's:

Over there if you didn't have the money, you just didn't go [out to eat]. The people who ate hamburgers, it was only for people with money. It cost a lot.

The women also described their children's pre-immigration school lunches. For the most part, mothers either made healthy lunches for their children to take with them, or the school offered nutritious choices for the children to buy.

Donna describes the Mexican school lunch offerings:

[My children] would eat once they got there [to school]... Lunch is the only meal or food time that they get [in school]. It's 30 minute recess. It's not like here where the children need snacks. We actually didn't know what snacks were.

Mary added:

Every mother, they go to school to feed their kids. [I take] like fried eggs with salsa, potato with beans, fried tacos, rice... we cook a lot of rice. We cook the rice with tomatoes, sometimes white [rice] with vegetables. Over there, outside of the school, the kids can buy fruit. Like snack.

Stories eliciting memories of eating practices both within the home and at school, combined with descriptions of a physically active lifestyle describe lives of health and wellness for Murfreesboro's Hispanic immigrants pre-immigration. If Hispanic immigrants lived healthy, physically active lifestyles prior to coming to the US, the question now becomes what changes in their daily lives have negatively affected their health outcomes post-immigration?

POOR MOTHERS AND FOOD INSECURITIES

The post-immigration situation of these women and their families to the United States is very different. Their health habits and foods consumed here do not mirror those practiced

pre-immigration. Upon reading the research into immigrants and health, the theme of “food insecurity” kept popping up. And while this is a policy term, it aptly describes the state of being of many poor people, immigrants and non-immigrants alike. To understand the situation in which they find themselves, we must first explore the concept of food insecurity more thoroughly.

Food insecurity, defined as “limited or uncertain access to enough nutritious and safe food or limited or uncertain ability to acquire acceptable foods in socially acceptable ways” is prevalent among many low-income families (Bickel, Nord, Price, Hamilton, & Cook 2000). In 2002, about 11 percent of American households were classified as food insecure (Wilde & Nord 2005), but the rate was higher in households with children (18%), poor families (37%), and in black (24%) and Hispanic (22%) households (Nord, Andrews & Carlson 2003). As measured by the U.S. Food Security Scale (Bickel, Nord, Price, Hamilton & Cook 2000), food security is considered a marker for the adequacy and stability of the household food supply over the past 12 months for active, healthy living for all household members (Bickel 2000).

Studies show the potential negative impact of food insecurity on children’s health and development, associated with poor child outcomes in the realms of physical health as well as psychological and academic functioning (see Alaimo, Olson & Frongillo 2001; Casey 2006; Dunifon & Kowaleski-Jones 2003; Slack & Yoo 2005; Winicki & Jemison 2003). Adverse impacts of food insecurity on young children’s health and development are important given the linkages between early childhood circumstances and later life outcomes (Case, Fertig & Paxson 2003). In particular, food insecurity may be a concern for the young low income children of immigrants, given their already elevated risk for poor health (Huang, Yu & Ledsky 2006). Within anthropological ethnographic studies, Janet Fitchen’s research and hypothesis provide examples that food and eating patterns of low-income people, despite the economic constraints of poverty, follow many dominant American cultural ideas and food practices that may actually exacerbate malnourishment (Fitchen 1986). Her research identifies several factors contributing to uneven distribution of hunger across populations within the United States, namely that population groups [including African Americans, Hispanics, Indians, households headed by women, and children], geographic regions [particularly the South], and age ranges most likely to fall below the poverty line are most at risk for being hungry and malnourished.

Jerome offers an explanation for contemporary eating habits, that even in cases of poverty, “Food preferences that lean towards finger foods, fun foods, snack foods, and fast and convenient foods express basic American cultural values” (Jerome, quoted in Fitchen 1986). Low-income people express their membership in the society and their adherence to its dominant values through many of the same food choices that characterize the rest of the population such as using food stamps or vouchers to buy heavily advertised, status-invested foods seen on television as a means of exercising their freedom of choice in buying practices. Unfortunately, the effect of junk food on the poor is worse because while they can only afford to buy highly processed, fatty and sugary foods, more affluent people can

afford to buy both junk food and nutritious food. More importantly, Fitchen explains that the United States Department of Agriculture (USDA) supervises the food stamp program as well as the free and reduced-price school lunches and nutrition education for the poor. She claims that the poor are not the USDA's main constituents due to the fact that the interests and political power of the food industry and the agricultural sector of the economy exert such a strong influence on food assistance programs. Only the Women, Infant, and Children [WIC] program is under a federal department primarily charged with people's well-being, the Department of Health and Human Services (Fitchen 1986). Other researchers' findings reveal how government assistance programs assess immigrant groups' deservingness of welfare, the food stamp program, and healthcare depending on their country of origin and the affects this has on their incorporation into American society (see Bean, Van Hook & Glick 1997; Horton 2004). Further research establishes a definite relation between legal and illegal immigrants living below the poverty line and definite food insecurities, leading to malnutrition, particularly for children of immigrants (see Chilton 2009; Drachman 1995; Kasper, Gupta, Tran, Cook & Meyers 2000; Van Hook & Balistreri 2004).

Food insecurity has both qualitative and quantitative effects on diet. Immigrants, particularly Hispanics, experience adverse psychological effects of food insecurity (Quandt, Shoaf, Tapia, Hernández-Pelletier, Clark & Arcury 2006). Not only do they find themselves faced with the economic constraints posed by poverty, low-wage employment, job insecurity, language, education, and marginal social position, but this risk is compounded by restrictions on enrollment in government programs designed to prevent food insecurity because many lack valid immigration documents and do not seek government assistance due to fear of being deported.

With so many immigrants moving from Latin American countries into areas of the United States, particularly to the American South, there is little infrastructure in the Hispanic and Latino community to receive these new members, leading to feelings of isolation for them. Depression and stress interfere with a parent's ability to work and balance a food budget on a low monthly income. Parenting skills and knowledge of what assistance is available for those mothers who may not have legal status, as well as the length of time spent in the United States becoming acculturated also affects household level food insecurity (Kalil & Chen 2008). Language barriers of non-English speaking mothers often keep them from becoming involved at their children's schools and other organizations within the community, as well as in negotiating with the bureaucracies of government assistance programs or private charities.

Thus, low-income immigrant families, compared to their native counterparts, are at greater risk of food insecurities and have lower overall profiles on the socioeconomic and demographic factors that correlate with food insecurity. Combined, these challenges lead to a less productive and fulfilling life in the United States due to malnutrition --whether from obesity or deficient diseases—and decreased physical health statuses. This information is important to understanding how food and health are intertwined in the immigrant

experience, bringing food insecurity and poverty into consideration as factors contributing to the health crises many immigrants face after becoming acculturated to US food practices.

THE SITUATION IN MURFREESBORO: POST-IMMIGRATION

After the first interviews during which consultants were asked to describe their lives back home, in the second interview, they were asked to describe their daily lives and eating habits in the United States. For these Hispanic immigrant families, living in Middle Tennessee does not come without a struggle. Many of the parents work multiple jobs in order to support their families, and still most live on the brink of poverty. Thus, the lived experiences of Hispanic immigrants in Murfreesboro fall in line with research on poor mothers and food insecurities.

Donna said of her family's nutritional habits post-immigration:

We wake up and sometimes we eat cereal, or coffee with a ham and mayonnaise sandwich. Maybe a smoothie with oatmeal, bananas, milk and sugar. When I see that in the kitchen there is not much I resort to eggs... He [her son] doesn't like vegetables- he has got to start to like vegetables.

Emily reported:

We go one day of week [to the grocery store], so we have [food] for all week. In the morning I get up and eat a yogurt or banana. Or drink milk sometimes. Sometimes in the morning they [her daughters] eat like a yogurt, juice, but most of the times they eat at the school. They eat the lunches at school and ask for hamburgers or pizza at home. It is difficult for them to eat that which is similar to the food at home [in school]. And the girls eat cereal at night. And sometimes I just eat an apple or eat a fruit or something, cookies or something. I buy the cornflakes or cheerios and I watch them. I tell my little girl, "Don't put sugar on it," and but sometimes I put a banana in the cereal. She likes. I just trying to - that they eat something nutritious and healthy.

Georgia commented:

It's more difficult to be thinner now. All I eat is dry fibrous cereal and coffee [for breakfast]. I like my coffee black. So what I do is I eat the cereal [dry] and I chew it up, then I drink some coffee with it, I like this. Every once in a while, I cook the children eggs. Sometimes we do refried beans; we do eggs with chorizo, tortillas with cheese. We eat dinner at 6 PM, but they go to sleep late, all three [children]. It will be around 10 or 10:30 PM and they're wondering what to eat or drink...If something is left over like rice or meat, he goes and eats the rice and meat. Always. And if I don't make anything, perhaps I made food at 4 PM, and I think that the meal would be good for the rest of the day because I don't feel like eating anymore that day. At 3 or 4 PM we eat. Maybe we eat at 5, and I think to myself, "Ok, no more cooking today." But when I cook at 5 PM, I think it is enough for

the rest of the day. But, the three keep eating. Cornflakes, rice, meat, whatever they like that's left over, they eat. Except salads, they don't eat salads.

Nutritional habits that have changed a lot are the consumption of fast foods. In their home countries, immigrant women spoke of rarely consuming fast foods because of the distance and cost involved in being able to consume the foods. Hispanic women describe an increase in consuming fast foods post-immigration.

Emily describes her family's fast food consumption post-immigration:

[We eat fast food] probably one time [per week]. Sometimes the Chinese buffet. I like to order the grilled chicken [at fast food restaurants] but the girls like meat. They order hamburgers. I always get sweet tea or Sprite. The children drink Dr. Pepper or Coke. The youngest drinks Sprite. They [her children] always get fries.

Georgia echoes:

Sometimes when I can't [cook], we go [eat fast food]... McDonald's, Burger King, Mrs. Winner's, and sometimes we eat Chinese; I like Chinese. I like them all.

Nora's family too has fast food several times a week:

Maybe one day during the week and once on weekends [we eat out], but one weekend yes, one weekend no [they alternate weekends for eating fast food]. For me, I like the chicken sandwich. It tastes better in my mouth. They [her children] have the Whopper and fries. With Coke or Sprite or juices to drink.

The level of physical activity among Hispanic immigrants in Middle Tennessee suffered a drastic loss after immigration. Environmental factors, such as living in unsafe neighborhoods as well as the outside temperature during much of the year in Tennessee, affect desires to engage in physical activities; and the women interviewed portray a life largely lacking physical activity compared to their stories of exercise pre-immigration.

Donna said of physical activity post-immigration:

It is normal that they wake up, go watch television and then go outside to play. Then the heat gets to them and they come in. They're up and they're around before breakfast. Playing with toys, then outside, then they come in and want breakfast. We walk sometimes or maybe run, play with the ball. They always want me to go out there with them, but I say no most of the time.

Emily reported:

I get up at 6:30. I take the girls to school and then I go to the park [Greenway] to walk for forty-five minutes to an hour. I clean just a little. I mop and do the dishes. I sweep. All of the days, each cleans, the girls too. In the evenings, I try to take them [her children] to

the park; I don't let them go out here because it's a bad area. My husband prohibits them from going outside without someone.

Mary said:

They only watch TV; they don't want to help me! Every afternoon my cousin takes them outside and they play with the ball over there. But everyday they play, or I take them everyday to thepark, for a walk, or to see things. We have to drive everywhere. There is hardly any chance for exercise here.

Vickie said of physical activity:

When it's not too hot they [her children] can leave the house. In the mornings, they can walk around the neighborhood or ride their bikes, and when the sun lowers later on they can [go outside].

More important than the changing nutrition habits and physical activity levels are the worries these Hispanic immigrant mothers have about the health and well-being of themselves and their children. Many of the women voice their concerns about their children becoming obese and outgrowing their clothes, as well as the concerns about the lack of physical fitness they have seen both in themselves and in their children.

Emily voiced her concerns about health post-immigration:

I don't know... why they are overweight. I am always worried about that. I try to get them as physically active as possible. I take them to go swimming, to the park. The three of them are overweight. In Mexico we didn't have to worry like here, but here it's one more thing that the food – the majority of children, it's difficult to cook them good food that they'll really eat. You have to cook something that they'll eat.

Donna too had worries about her children's health:

Lately when I go out and buy clothes for him [one of her sons], I have got to look in the larger boy sizes because all he eats is meat. We have trouble finding the right size and he gets frustrated, so I tell him that we will, because I've been a bit careless with my cholesterol too, we will start eating more vegetables and healthier. I have the [diet] plan over there, our diet will change. We don't eat until we're full. I worry about the younger one [the heaviest son] because his weight went up a lot and now he is snoring a lot as well. I think to myself, "It's going to cost me more to have him in a hospital than to help him with his diet." We don't eat the food [follow the diet recommendations] exactly, but sometimes very similar.

Vickie's concerns are similar:

I wanted him [her son] to eat carrots, but he doesn't like them to come with his food or lettuce, no carrots, nor anything like this. So the customs, his customs with food are not good... My husband he has become a little fat in this culture.

The information these interviews provide is invaluable for understanding the experiences of local Hispanic immigrants. By reading their individual stories and post-immigration outcomes, the researcher has a mental picture of the nutritional habits, amount of physical activity, and the concerns and worries these immigrant mothers have about their own lives and for the lives of their children. The home environment plays a huge part in the outcomes of health statuses for immigrants, as does the school environment, a place where immigrant children are quickly becoming more acculturated to US food habits than their parents.

While these interviews provide information and life stories from only seven people, they serve as proof that the fast-growing health crisis within the immigrant community is real, especially in Middle Tennessee. As immigrants become acculturated to life and to the food habits of America, so too do their bodies begin to mirror the shapes and illnesses of other Americans.

Research in School Cafeterias

Food and the eating environments in which they are consumed likely contribute to the increasing epidemic of obesity and chronic diseases over and above individual factors such as nutritional knowledge and motivation for eating healthy. In contrast to research conducted by clinical nutritionists, dieticians, and epidemiologists, anthropological research contributes a more in-depth examination of the culture of school cafeterias and of the immigrant youth within these environments.

Anthropologist Mary Story's research focuses on an ecological framework for conceptualizing the many food environments and conditions that may influence food choices, pinpointing knowledge regarding the home and school settings for low-income and immigrant groups as nutrition environments affecting health, a finding significant to this research. Her research reifies the scientifically-proven fact that diet plays an important role in the prevention of obesity and chronic diseases and that by modifying intake behaviors, Americans have the potential to fight and topple the current obesity epidemic plaguing much of the country's population (Story, Kaphingst, Robinson-O'Brien & Glanz 2007).

Focusing on the environment of educational settings, Story explains that within the home, availability and accessibility to healthy foods, the frequency of family meals, parental intake and parenting practices dealing with their children's nutrition all potentially affect the eating habits of children as they age. Yet we know that for many low-income immigrant families, parents work at all hours, therefore putting immigrant children at risk, lacking stable adult influences for developing healthy eating practices. For this reason, some of the responsibility for teaching these at-risk children the importance of making healthy food

choices as well as including adequate physical exercise in their lifestyle falls on immigrant children's schools.

Meals served in school cafeterias are required to meet federally-defined nutrition standards and the Dietary Guidelines for Americans. However, federal requirements for cafeterias do little to control standards of competitive foods sold in vending machines by outside companies or to set school-wide nutrition standards; the school environment can be a place of concern when addressing the obesity epidemic in school-aged immigrant children. Only recently has the implementation of nutrition standards in educational facilities appeared, recommending outside competitive vendors bringing snack foods into schools for student purchase only be allowed to offer fruits, vegetables, whole grain, and nonfat/low-fat dairy products.

Among educational institutions with higher proportions of low-income and immigrant/minority student populations, the federal and state governments need to step in with assistance programs to increase daily intake of fresh fruit and vegetables amongst these students. Other efforts to improve the quality of foods in schools could include farm-to-school programs, which link local farmers providing fresh locally-grown produce to school food service cafeterias and school gardening programs. There is also a need for classroom nutrition education to complement changes in the school environment to increase students' skills for adopting healthy lifestyles (258). In her conclusion, Story states that, improving dietary and lifestyle patterns and reducing obesity will require a sustained public health effort, which addresses not only individual behaviors but also the environmental context and conditions in which people live and make choices. Individual behavior change is difficult to achieve without addressing the context in which people make decisions. (266)

Conducting research within the American South, anthropologist Deborah Crooks' research in a Kentucky elementary school on the cafeteria and snack foods provided for purchase focuses on the two ways schools shape nutritional habits of children: first, children spend many hours at school per day, where they may consume up to one-third of their calories, and second, schools are the primary place where children learn about nutrition and appropriate diet through classroom teaching (Crooks 2003). The original aims of her research were to: (1) Document the growth and nutritional status of elementary school children in the community; (2) document the dietary intake and activity patterns contributing to nutritional status; and (3) gain an understanding of environmental factors that shape dietary intake. (183-184). Results from her research after assessing these children's anthropometric and dietary intake data showed that the students at this school were overweight or borderline overweight, with many of their body mass indexes (BMIs) over those of the reference group provided through the National Health and Nutrition Examination Survey (NHANES) nationally representative samples (MMWR 1997). When analyzing dietary intake, evidence supported that children consumed high-fat, high-sugar foods and rarely consumed fruits and vegetables. Children at this school in Kentucky also consumed greater amounts of total fat, saturated fat, and carbohydrates in ratio to other nutrients suggested as healthy amounts by federal dietary guidelines.

Economic status, ethnicity, and region all add to the educational environment for predicting nutritional risk for children. Cara Ebbeling identifies a number of environmental influences on diet, physical activity, and family practices in the United States that promote overweight and poor nutritional status among children and that make long-term improvement in nutritional status difficult to attain. In addition, it is proposed that underfunding of schools may lead to reductions in or elimination of physical education classes, the contracting out of food services to companies that often sell low quality fast foods, and/or the placement of vending machines in schools for the sale of soft drinks, and, as others point out (Wechsler 2001), low quality, high calorie snack foods (Ebbeling 2002).

Studying the immigrant youth population, Melissa Salazar explores the childhood memories of *Mexicano* (Mexican-origin) adults as illustrations of the importance of the school cafeteria as a complex public eating space for ethnic minority students (Salazar 2007). Her study finds that for minority Hispanic students, the lunchroom becomes not just a place to eat, but an environment where assimilative food pressures and peer relationships collide, forcing these immigrant children either to become fully acculturated to Western food practices, or to negotiate a boundary between home/ school foods. Salazar discusses that in institutional lunch programs, Hispanic and other minority youth confront both institutional and peer pressures to adopt the dominant food norms of American school lunch. She explains that it is unlikely that *Mexicano* students encounter culturally familiar foods from home within the menu offerings of American school lunch menus. As a result, “Immigrant and ethnic minority children spend a good portion of their lunchtime trying to ‘fit in’ both with their food habits and with whom they sit” (154). Her findings suggest that immigrant children acculturate to Western food habits faster than their parents or other adults.

This data on school cafeterias provides a context for understanding the stories of Hispanic immigrant school children’s experiences in Middle Tennessee and the changes they have faced in local school cafeterias. From the interviews between immigrant mothers and Drs. Fadzillah and Leggett, Nora and Donna explained that their children found eating American foods difficult when they first started consuming them because of the cultural unfamiliarity between the foods eaten at home and those served to them at school. Sometimes their children still take their lunches from home and often refuse to eat the breakfast foods served in their school cafeteria. However, after years of growing accustomed to eating such foods as hamburgers, fries, and pizza at school, the children have started asking for these items at home as well, which concerns their mothers who do the shopping and prefer to make healthier buying choices for their children. Instead of snacks of fresh fruits or vegetables, the children prefer sweet items for snacks, such as cookies or candy as well as soft drinks or artificially flavored fruit juices.

This provides clues to the changing food habits of Hispanic immigrants coming in large part from their children becoming acculturated to American foods faster than their parents. What is important to note for the overall research is that public school cafeterias play a huge part in the changing health statuses of immigrant children, who then take the

newly acquired eating habits home to influence eating habits of the rest of their families. This provides an interesting question about the changing health statuses of immigrant children and natives alike: would we see a halt and possible turn-around in the obesity epidemic impacting not only immigrant populations but all of America's youth by changing nutritional policy in school cafeterias?

CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

New immigrants from such regions of the world as Central, Latin and South Americas, Southeast and East Asia, Africa and the Middle East come every year to build better lives for their families due to our thriving job market within Middle Tennessee. How much of their income people can assign to food—and indeed, how much time they can give to preparing and even eating it—is a vital factor in the persistence of tradition and the shaping of change. When such change has the effect of revolutionizing both food production and the circumstances of its preparation and consumption that means its lived impact falls squarely upon existing patterns of eating (Mintz 2007).

This research provides a detailed study of food in anthropology, important to providing an in-depth look at the omnipresent role food plays in culture. By examining previous literature combined with an examination of raw data provided through recent research conducted by Drs. Ida Fadzillah and William Leggett in 2009, the researcher was able to answer her research questions: how are Latino and Hispanic immigrant populations' nutritional statuses affected by acculturation to the United States and to Middle Tennessee, and what factors come in to play in changing their own cultural food practices? Changes in food availability and preferences, food insecurities, school lunch offerings, time spent engaged in physical activity, the lack of strong immigrant community solidarity, hectic daily schedules, lack of information about aid programs offered to low-income families, and becoming accustomed to life in the US have profound effects on Hispanic immigrant lives and bodies.

A compelling study of Korean immigrants found that the longer this group stays in the US, the more diet related diseases such as cancer, hypertension and coronary heart disease, digestive diseases, arthritis, and diabetes occur among individuals in this population (Yang, Chung, Kim, Bianchi & Song 2007). Another study set up bilingual nutrition classes with interpreters to increase the health statuses of immigrant Vietnamese women who qualified and received WIC benefits (Ikeda, Pham, Nguyen & Mitchell 2002). These studies on Korean and Vietnamese immigrant groups' health outcomes suggest that studying the effects of acculturation on Hispanic-Latino immigrant lives is not a novel idea; anthropological research on food and culture provides the complex details of this health crisis that statistical studies often lack. Further research examining other ethnic immigrant groups on the subject of nutrition and health would bring valuable cross-cultural understanding to the experiences of other ethnic groups moving into the US, as well as to Middle Tennessee, perhaps providing answers to the changes seen within minority groups. The immigrant experience is not the same for every group or even for each

individual; indeed, this researcher hypothesizes that health outcomes of other immigrants differ according to their experiences of acculturation.

The popularity of studying health and nutrition has not abated, but has become an even more popular topic on the forefront of research within all disciplines, especially in the social sciences. Particularly within the university academic setting, research grants funded through the Tennessee Board of Regents [TBR] related to nutrition and health in three of the five research projects funded in 2009 alone. This fact shows that scholars from all disciplines are taking notice of the growing health crisis and do not just want to exploit immigrant groups for their research, but want to provide advocacy and change to benefit these people for being willing to step forward with their stories of health and wellness alteration. Research in this area will only continue to grow as the obesity epidemic does, until researchers along with other concerned citizens become committed enough to intervene on behalf of not only the immigrant community, but for native Middle Tennesseans as well, challenging the local, state, and federal governments to make the necessary amendments in nutrition policy to arrest the current health crisis apparent not just in the South but across the entire US.

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